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58982 7590 11/25/2008

CATERPILLAR/FINNEGAN, HENDERSON, L.L.P.
901 New York Avenue, NW
WASHINGTON, DC 20001-4413

EXAMINER

SIDDIQI, MOHAMMAD A

ART UNIT

PAPER NUMBER

2454

DATE MAILED: 11/25/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/646,684

08/25/2003

Thomas J. Kelly

08350.3304-02

9971

TITLE OF INVENTION: SYSTEMS AND METHODS FOR PROVIDING SERVER OPERATIONS IN A WORK MACHINE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	02/25/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

58982 7590 11/25/2008

CATERPILLAR/FINNEGAN, HENDERSON, L.L.P.
901 New York Avenue, NW
WASHINGTON, DC 20001-4413

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/646,684 08/25/2003 Thomas J. Kelly 08350.3304-02 9971

TITLE OF INVENTION: SYSTEMS AND METHODS FOR PROVIDING SERVER OPERATIONS IN A WORK MACHINE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 02/25/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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SIDDIQI, MOHAMMAD A 2454 709-249000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,684	08/25/2003	Thomas J. Kelly	08350.3304-02	9971
58982	7590	11/25/2008	EXAMINER	
CATERPILLAR/FINNEGAN, HENDERSON, L.L.P. 901 New York Avenue, NW WASHINGTON, DC 20001-4413			SIDDIQI, MOHAMMAD A	
			ART UNIT	PAPER NUMBER
			2454	
DATE MAILED: 11/25/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 904 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 904 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/646,684	KELLY ET AL.	
	Examiner	Art Unit	
	MOHAMMAD A. SIDDIQI	2454	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/29/2008.
2. ☒ The allowed claim(s) is/are 1, 3-6, 14-15, 17 and 24-26 (Please rearrange claims 1-11).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>10/09/2008</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

/Nathan J. Flynn/
Supervisory Patent Examiner, Art Unit 2454

DETAILED ACTION

1. Claims 1, 3-6, 14-15, 17, and 24-26 are allowed.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Philip Hoffmann on 10/10/2008.

The claims has been amended as attached:

In the claims:

1. (Currently amended) A communication system ~~for managing communications between one or more on-board modules connected to one or more on-board data links and one or more off-board systems connected to one or more off-board data links, the system~~ comprising:

an off-board computer; and

a first work machine, comprising:

an on-board data link;

~~a first~~ an on-board control module connected to a first ~~the~~ on-board data link, wherein the on-board module and first on-board data link are located in a work machine, and the first on-board control module monitoring a value of a first parameter information data code of a mechanical system on-board is configured to gather information relating to operation of the first work machine, and generating a first message containing the value of the first parameter information data code;

~~a first off board system connected to a first off board data link, wherein the first off board system is remotely located from the work machine;~~
and

a an on-board gateway embedded in the work machine, comprising the gateway including:

a first interface for connecting to the on-board data link; and

a second interface means for connecting the on-board data links and to an off-board data link links respectively to the gateway;

a server application configured to perform, when executed by a processor, a server process based on a server request provided by at least one of receive the first message from the first on-board module via the on-board data link, to communicate with a second work machine via the off-board data link to receive a second message containing a value of a second parameter information data code of a mechanical system on-board the second work machine, and the first to communicate with the off-board computer; system,

a communications application configured to convert a data formats of the first and second messages message from a first format to a second format for communication to the off-board computer, based on a type types of data link links used by the gateway to transmit the data first message and second messages [[,]]; and

a Web server application configured to generate work machine performance data based on the converted first message or on the converted second message, and to provide perform a Web server process that provides a Web page, maintained by the gateway, to the first off-board system, the Web page containing the work machine performance data, the work machine performance data including the value of the first parameter information data code or the value of the second

~~parameter information data code information relating to operation of the
work machine gathered by the first on-board module,~~

~~wherein the off-board computer being configured to communicate with
the gateway, via the server application, to access the Web page containing the work
machine performance data, and the gateway selectively executes executing the
server, communication, and Web server applications based on a type of request
received by the gateway from one of the first on-board control module and first or
from the off-board system computer.~~

2. (Canceled)

3. (Currently amended) The system of claim 1, wherein the first interface ~~means~~
includes a plurality of on-board data link ports each connected to ~~respective ones of~~
the on-board data links ~~including the first on-board data link.~~

4. (Currently amended) The system of claim 3, wherein the second interface
~~means~~ includes a plurality of off-board data link ports each connected to ~~respective~~
~~ones of the off-board data links including the first off-board data link.~~

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5. (Currently amended) The system of claim 1, wherein the ~~first~~ off-board data link is ~~one of~~ an Ethernet data link, an SAE standard serial data link, a wireless radio data link, ~~and~~ or a wireless satellite data link.

6. (Currently amended) The system of claim 1, wherein the ~~first~~ on-board data link is ~~one of~~ a proprietary data link ~~and~~ or an SAE standard serial data link.

7. -13. (Canceled)

14. (Currently amended) The system of claim 1, wherein the gateway is software embedded in an on-board module that controls one or more components of the first work machine.

15. (Currently amended) A method for managing communications in an environment including a first work machine having ~~one or more~~ an on-board data links link connected to ~~one or more modules on board the work machine and~~ an on-board control module, a an on-board gateway, ~~on board the work machine~~ and having ~~one or more~~ an off-board data links link connected to ~~one or more~~ an off-board systems computer and to the gateway, the method ~~performed by the gateway~~ comprising:

monitoring, by the on-board control module, a value of a first parameter information data code of a mechanical system on-board of the first work machine;

generating, by the on-board control module, a first message containing the value of the first parameter information data code;

~~receiving a request generated by a source device and transmitted on a first data link;~~

~~selectively executing, by the gateway, a server application based on the request, wherein the server application performs a server process to:~~

receive the first message from the on-board control module via the on-board data link,

communicate with a second work machine, via the off-board data link, to receive a second message containing a value of a second parameter information data code of a mechanical system on-board the second work machine, and

communicate with the off-board computer;

~~identifying a destination device associated with the request;~~

~~configuring the request to a format compatible with the destination device;~~

~~providing the formatted request to the destination device;~~

~~receiving a response to the formatted request from the destination device;~~

~~configuring the response to a format compatible with the first data link;~~

~~sending the response to a target device over the first data link, wherein the first data link is either one of the on-board data links and one of the off-board data links and the source device is either one of the on-board modules and one of the off-board systems; and~~

selectively executing, by the gateway, a communications application to convert formats of the first and second messages for communication to the off-board computer based on types of data links used to transmit the first and second messages;

~~selectively executing, by the gateway based on the request, a Web server application that generates work machine performance data based on the converted first message or on the converted second message, and that provides to the source device a Web page maintained by the gateway, the Web page containing information relating to operation of the work machine performance data, the work machine performance data including the value of the first parameter information data code or the value of the second parameter information data code;~~

providing to the off-board computer, by the server application, access to the Web page containing the work machine performance data,

the server application, the communication application, and the Web server application being selectively executed based on a type of request received from the on-board control module or from the off-board computer.

16. (Canceled)

17. (Currently amended) The method of claim 15, wherein the ~~destination device is connected to a second data link and configuring the request to a format compatible with the destination device includes: configuring the request~~ first message is converted to a format compatible with the second based on a type of the on-board data link, and the second message is converted based on a type of the off-board data link.

18. - 23. (Canceled)

24. (Currently amended) The method of claim 15, wherein the off-board data links ~~include data links selected from one or more of~~ link is an Ethernet data link, an SAE standard serial data link, a wireless radio data link, and or a wireless satellite data link.

Art Unit: 2454

25. (Currently amended) The method of claim 15, wherein the on-board data ~~links~~
~~include data links selected from one or more of~~ link is a proprietary data link ~~and or~~
an SAE standard serial data link.

26. (Currently amended) The method of claim 15, wherein the server application
leverages a communication application to convert the formats of the first and second
messages ~~perform at least one of the configuring steps.~~

27. - 34. (Canceled)

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMAD A. SIDDIQI whose telephone number is (571)272-3976. The examiner can normally be reached on Monday -Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nathan J. Flynn/
Supervisory Patent Examiner, Art Unit 2454